[*Biol. Pharm. Bull.*, **21**, 535-537 (1998)] [Lab. of Pharmaceutics]

A Rapid Assay of Granisetron in Biological Fluids from Cancer Patients.

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A convenient high-performance liquid chromatography (HPLC) was developed for the rapid assay of granisetron (GRN) in biological fluids, such as serum, urine, and pleural effusion, from cancer patients. Extrelut-1was used for the solid-phase extraction. HPLC was carried out using a LiChroCART cartrige column packed with Lichrospher 100 CN and a mobile phase consisting of 0.1 M acetate buffer (pH 3.5) and acetnitrile (7 : 3). A fluorescence detector of 290 nm for excitation and 365 nm for emission was used. The standard curve was linear over the range of 2 to 100 ng/ml of GRN. GRN was well separated on the HPLC chromatogram from drugs such as etoposide, metclopramide, ondansetron, and domperidone which are often used together with GRN. It is suggested that the present method is useful for the rapid monitoring of GRN in the serum, urine, and pleural effusion of patients undergoing cancer chemotherapy.

[*TDM Kenkyu.*, **15**, 225-231 (1998)] [Lab. of Pharmaceutics]

Vancomycin Pharmacokinetics in Pediatric Patients.

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We experienced 22 cases of VCM-TDM for pediatric patents so far. We observed a highly significant correlation between creatinine clearance and VCM clearance (VCM-CL) among these cases. Evaluation of the VCM-CL was possible in 12 of these cases. In these 12 cases, a significant difference in the VCM-CL between the time of first dosage and the time to reach the steady state was not observed. This result indicates that the pharmacokinetic evaluation of VCM at the time of first dosage is useful to ensure both effective VCM levels and safty. When administering VCM to pediatric patients, we recommend that a first dosage of 15-20 mg/kg is administered, and that the VCM pharmacokinetics is evaluated promptly for a dosage schedule of successive doses. The condition of the patients should be care-fully observed and pharmacokinetic evaluation should be made if symptoms, such as impaired renal function, develop. This method is useful to carry forward VCM therapy for pediatric patients effectively.

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Detoxification of Paraquat Poisoning: Effects of Aromatic Sulfonates on Paraquat Poisoning in Mice and Active Oxygen System.

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Aromatic sulfonates[m-benzenedisulfonate (BeDS), 2,6-naphthalenedisulfonate (NDS-2) and 1,3,6-naphthalenetrisulfonate (NTS)] having more than one sulfonate group in a benzene or naphthalene ring were able to alleviate paraquat (PQ) poisoning in mice, and 90% of mice treated with NTS at 2000 mg/kg after PQ ingestion still survived on the 14th day. The experiments ysing SOD-deficient E. coli and on tert-buthylhydroperoxide-induced or 1O2-induced hemolysis of erythrocyte showed that BeDS-2 and NTS were radical scavengers of peroxyl and alkoxyl radicals. In addition, NDS-2 and NTS had SOD-like activity and BeDS had quenching activity of singlet oxygen. The quenching effects of the aromatic sulfonates on active oxygen were equivalent to or even higher than that of the low-molecular alkylsulfonates.

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Biological Activities of (1→3)-β-D-Glucans with Reducing Glucose Side Chains.

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Newly synthesized (1→3)-β-D-glucans with reducing glucose side chains (6-*O*-glucopyranosylated curdlan and 3-*O*-glucopyranosylated curdlan), with glucose linked directly (except for anomeric carbon) had antitumor activity against mice sarcoma 180 in ddY male mice. The results of the antitumor test suggest that administration should be during a period in which the immune systems of the host can recognize the tumor. The two glucans potentiated the reticuloendothelial system (carbon clearance test) and activated macrophages (increased their glucose consumption). The activity inducing tumor regressing factor of the glucan derivatives was stronger than a linear (1→3)-β-D-glucan (curdlan) and the results suggest that the glucans induced the chemotactic activity of polymorphonuclear leukocytes in the tumor.